# Alaskan Way Viaduct Replacement Program

## Property Owners' Meeting

## SR 99 Tunnel Project

## Feb. 9, 2012

U.S. Department of Transportation Federal Highway Administration

WSDOT

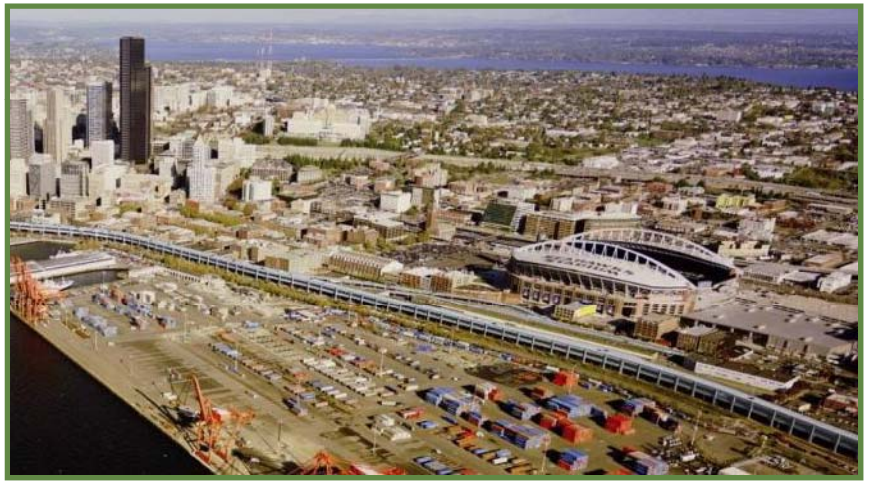
King County

Port of Seattle

City of Seattle

# Agenda

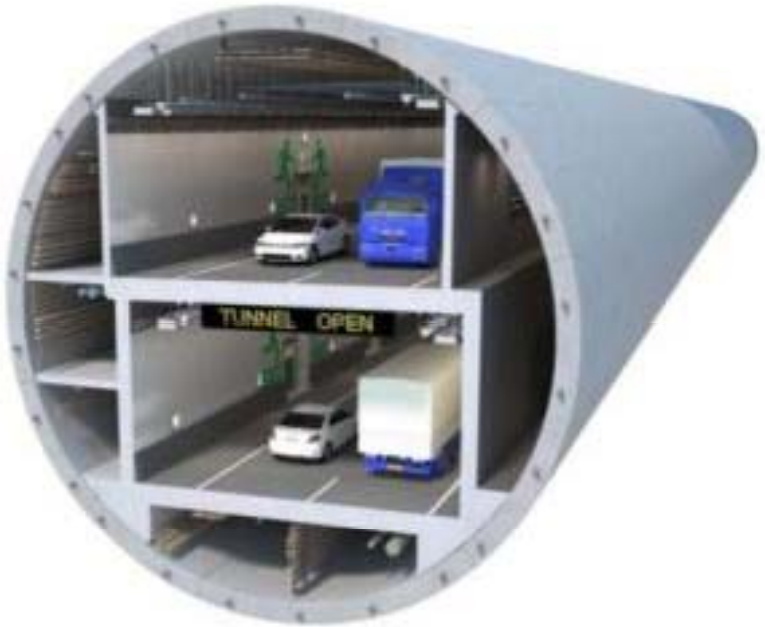
- SR 99 tunnel overview.
- Pre-construction surveys.
- Building monitoring and equipment.
- Claims process.



# Building the New SR 99 Corridor

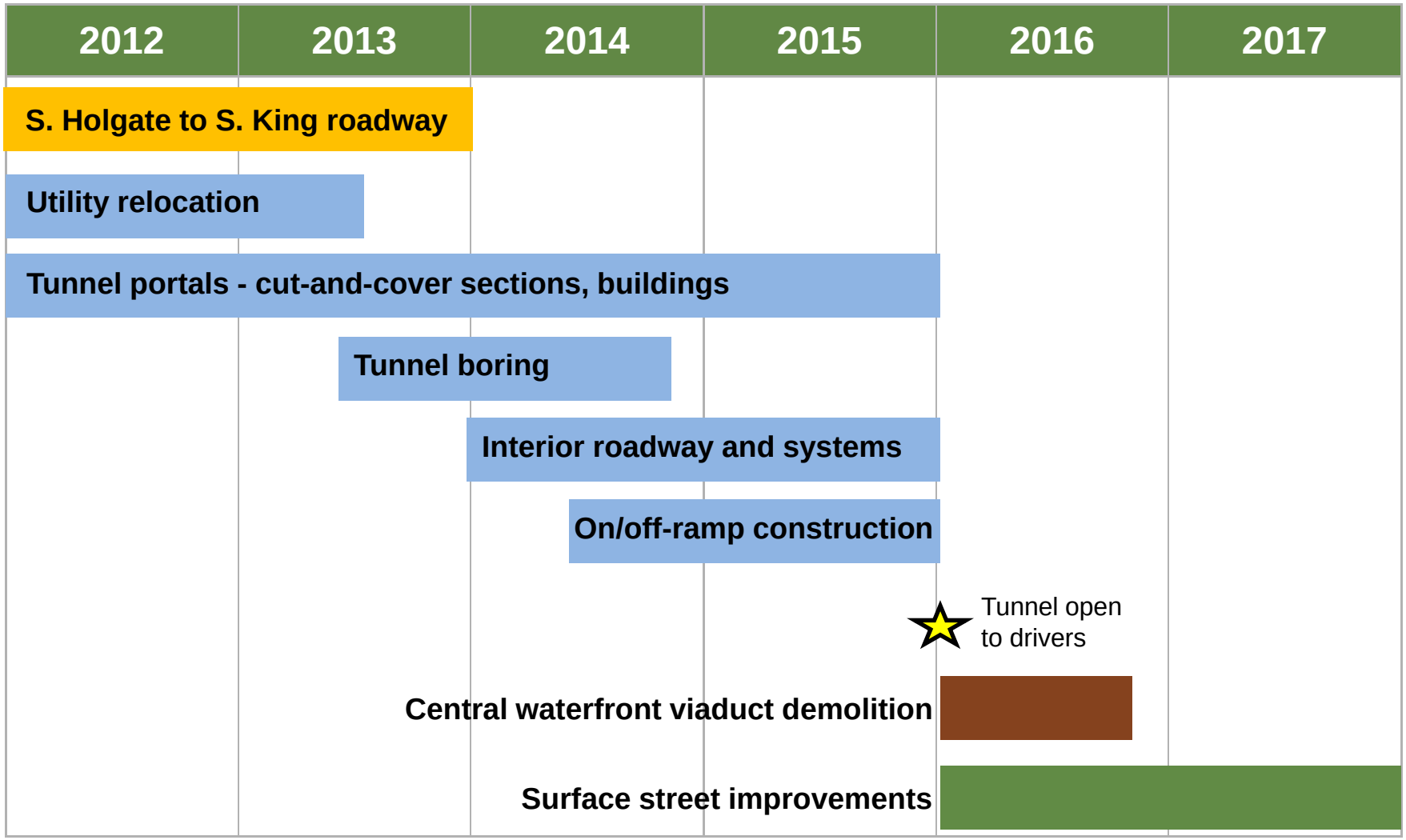
# SR 99 Tunnel

- Approximately two miles long.
- Two lanes with eight-foot safety shoulder in each direction.
- State-of-the-art safety systems.




*Tunnel cross-section design concept.*

# Construction Timeline



# Tunnel Construction: Next 6 Months

**North End:**

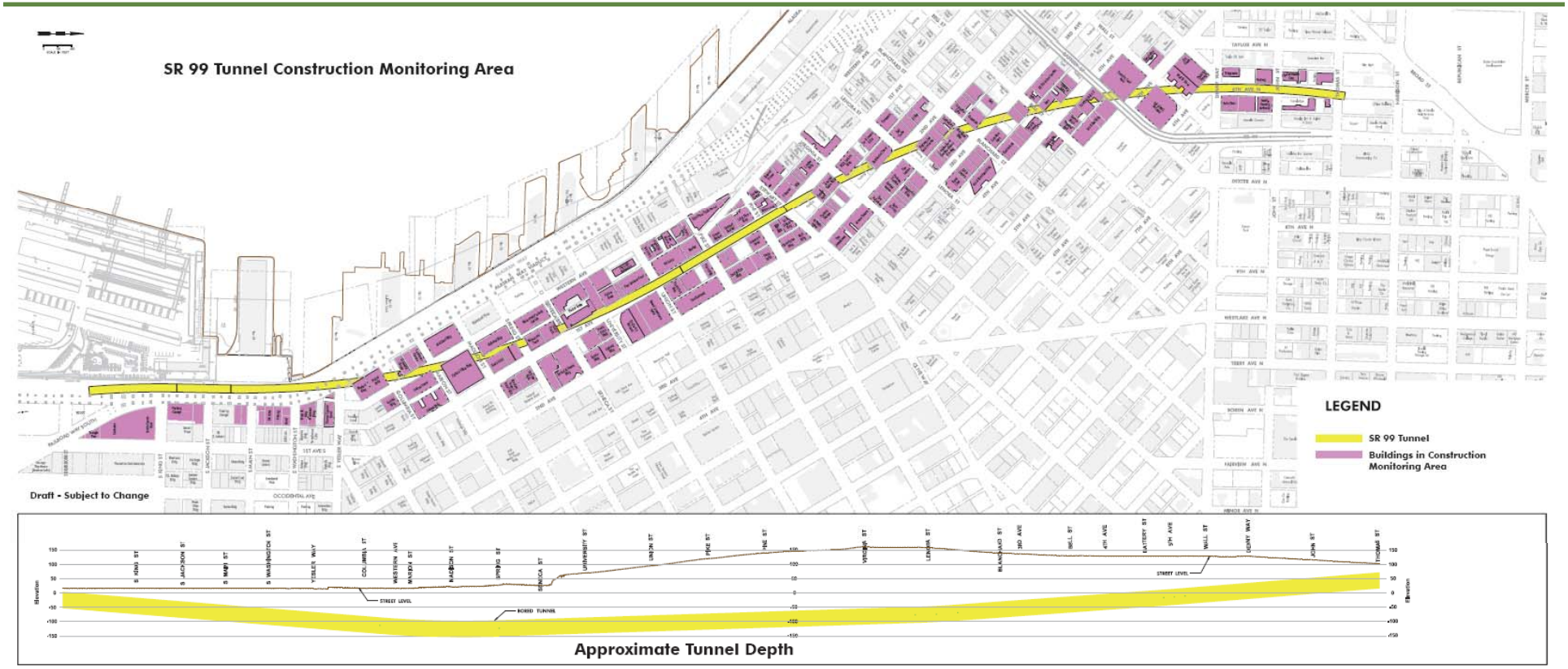
- Continue to relocate utilities.
- Demolish building at 330 Sixth Avenue North.
- Begin north portal excavation.

**South End / Central Waterfront:**

- Continue to relocate utilities.
- Begin settlement mitigation work for buildings and structures at the south end.
- Begin building tunnel boring machine launch pit.
- Begin building south operations building.

*Detour beneath the Alaskan Way Viaduct near Pioneer Square.*

# Construction Monitoring Area



# Pre-construction Surveys

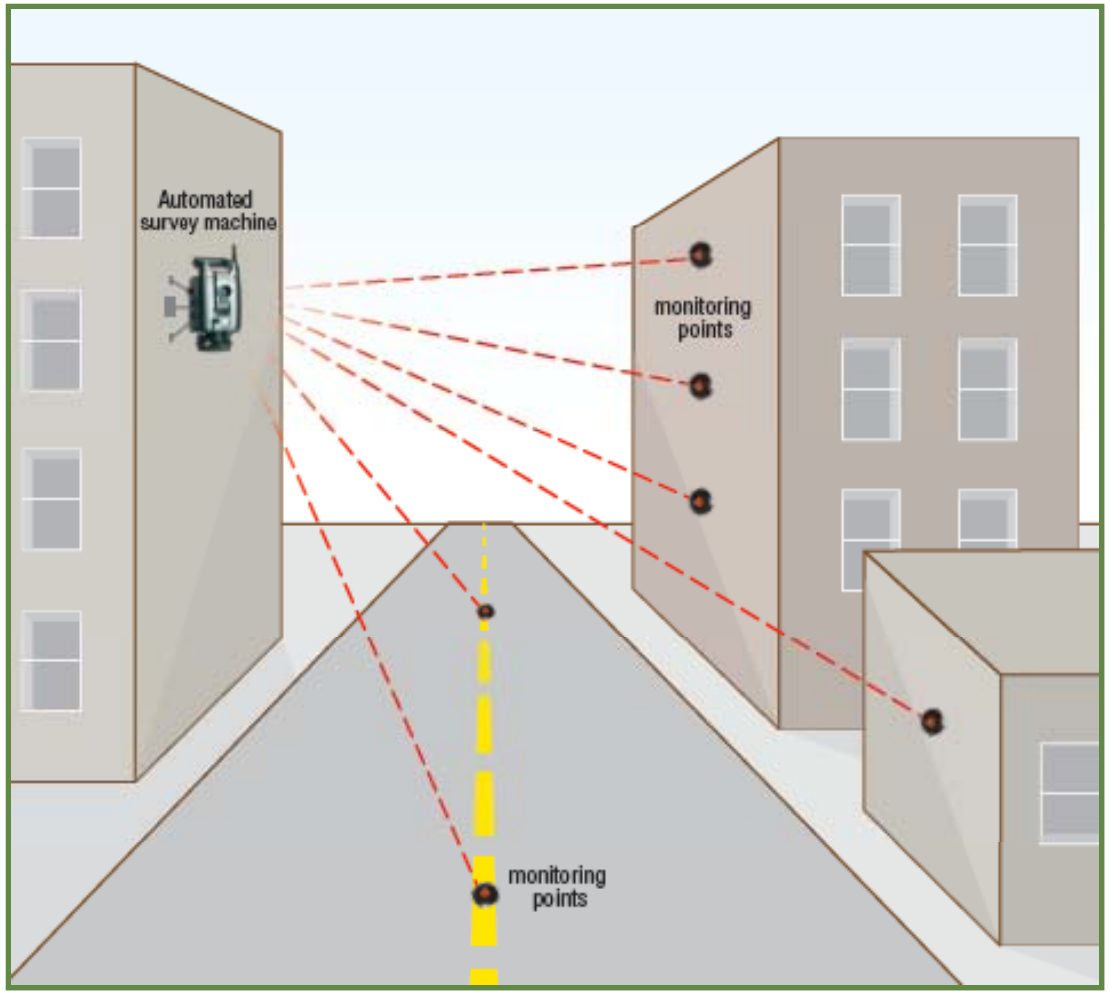
- Establishes a record of the building's current condition.
- Allows WSDOT and property owner to quickly verify if damage has occurred.
- Extensive photo and video documentation of property.

# Protecting Buildings

- We will work closely with property owners to share information and discuss individual property needs.
- Monitoring equipment on buildings, structures and in the street will help us obtain important information to mitigate potential damage.
- Buildings will be monitored throughout construction and all surfaces will be restored to original condition after equipment is removed.


*Example of monitoring equipment on building exterior.*

# Exterior Building Monitoring Equipment




- Automated survey machines measure building movement by continuously surveying nearby monitoring points.
- Monitoring points are small, stationary pieces of equipment placed on buildings and in the street.
- Any movement of the monitoring point will be detected by the survey machine.

# Monitoring Points

- Small, stationary pieces of equipment.
- Bolted to building exteriors.
- Range in size from 6-inch by 6-inch prisms to points as small as a nail head.

# Automated Survey Machines

- Continuously scan monitoring points to detect movement.
- Attached with brackets or stands to building roofs or exteriors.
- Approximate size: 1-foot by 6-inches plus the size of brackets or stand.

# Crack Gauge

- Measures changes in the size of existing building cracks.
- Secured to building with epoxy.
- Approximate size: 1-inch by 6-inches.

# Interior Building Monitoring Equipment

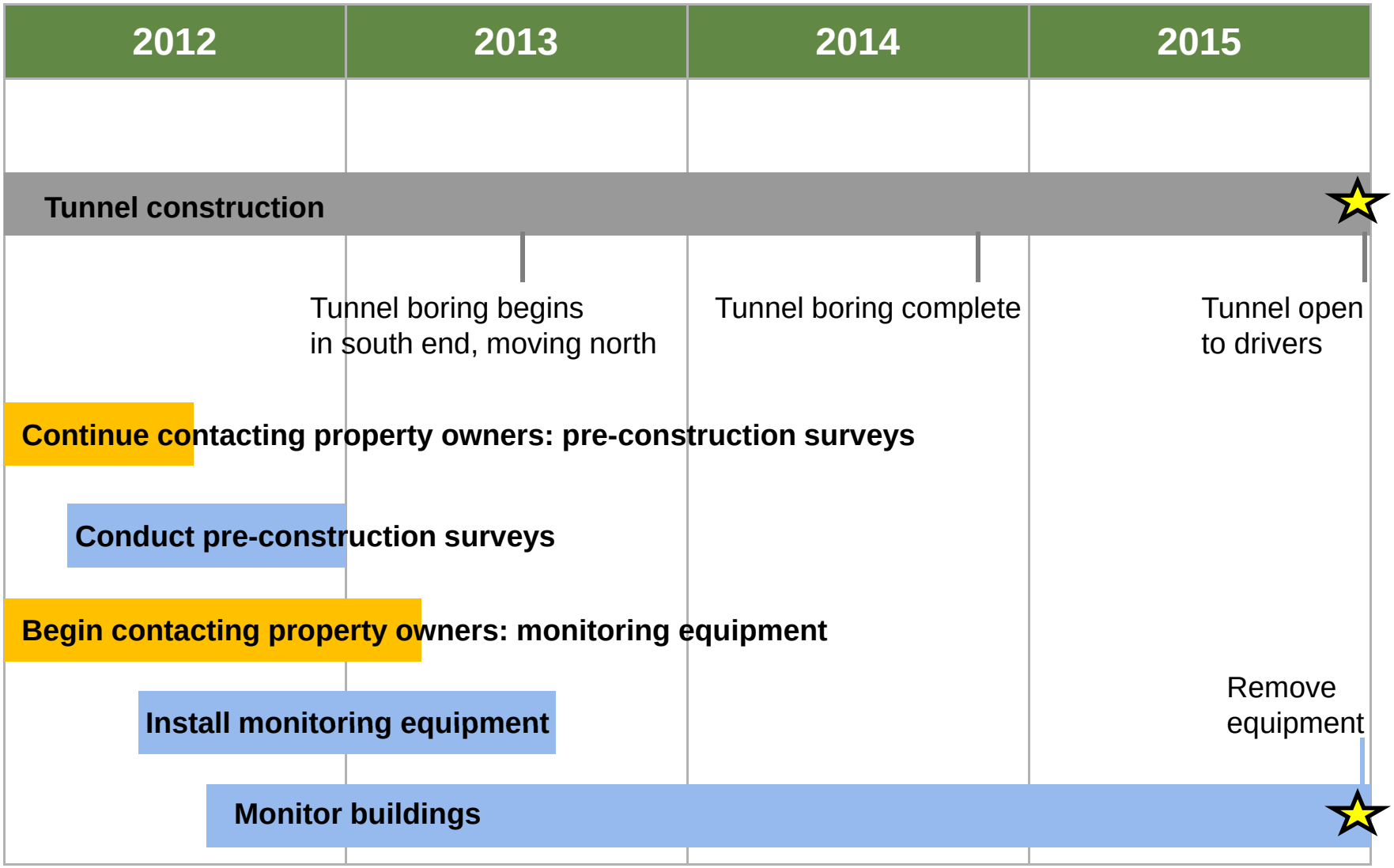
**Liquid level sensors**

- Typically bolted to basement walls.
- 6-inches by 3-inches.
- Connected to ½ inch diameter tube with water.

**Tiltmeters**

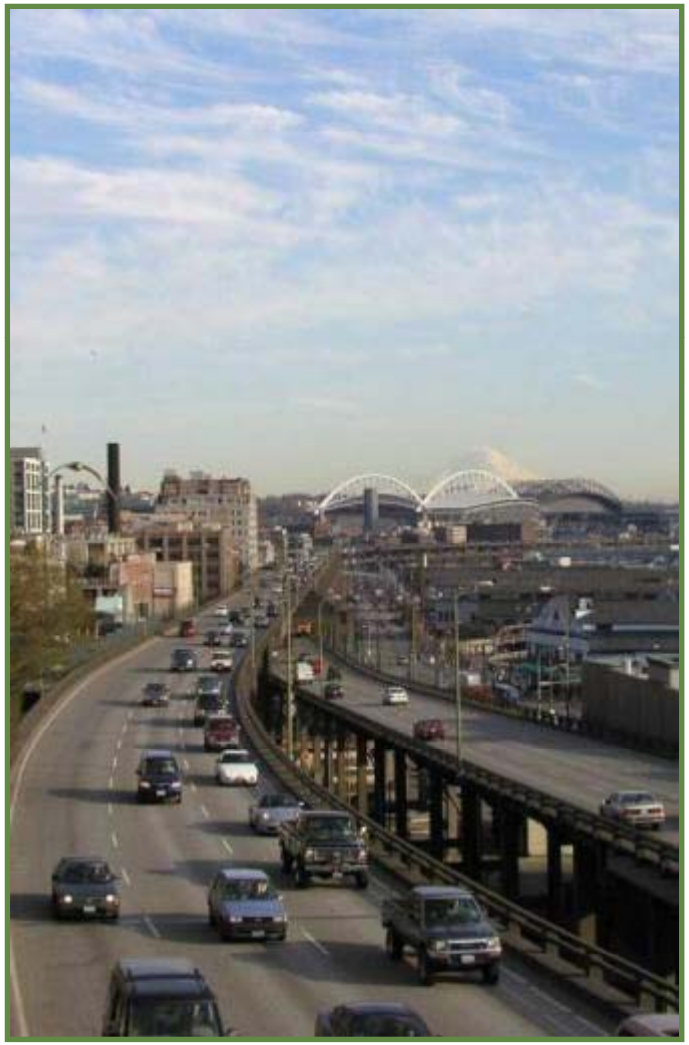
- Typically bolted to basement walls.
- 3-inches by 12-inches.

# Building Monitoring Timeline



# Claims Process

- WSDOT will be responsible for any damage that results from tunneling.
- Review of damages  will rely heavily on information from the pre-construction survey and building monitoring equipment.
- Damage reports will be managed by the Alaskan Way Viaduct program staff. There will be an appeal process, if needed.
- Repair of damages will be negotiated with property owner.
- Historic building repairs will be consistent with federal and local preservation standards.



**Website:**
www.alaskanwayviaduct.org

**Email:**
viaduct@wsdot.wa.gov

**Hotline:**
1-888-AWV-LINE